

2014

# Annual IMPACT Report 2014: A report by the IMPACT Data Collection and Analysis Team, Part 2

IMPACT Management Team

IMPACT Assessment Team

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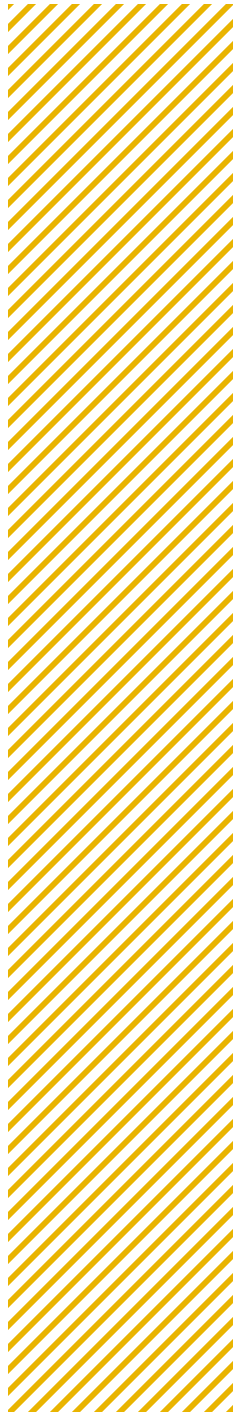
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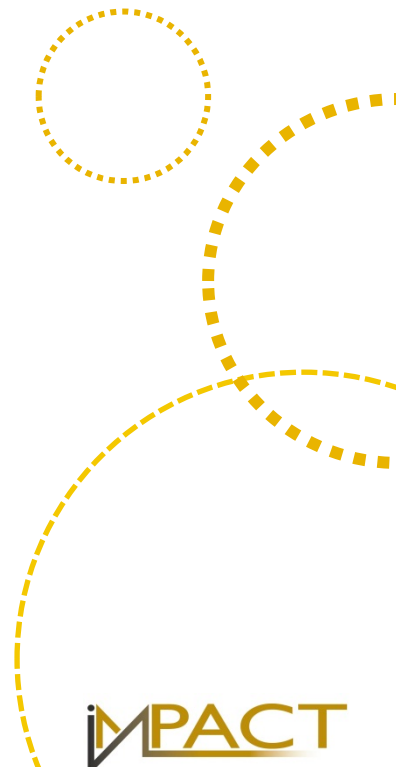
# **IMPACT**

ANNUAL REPORT

# **2014**



**PURDUE**  
UNIVERSITY

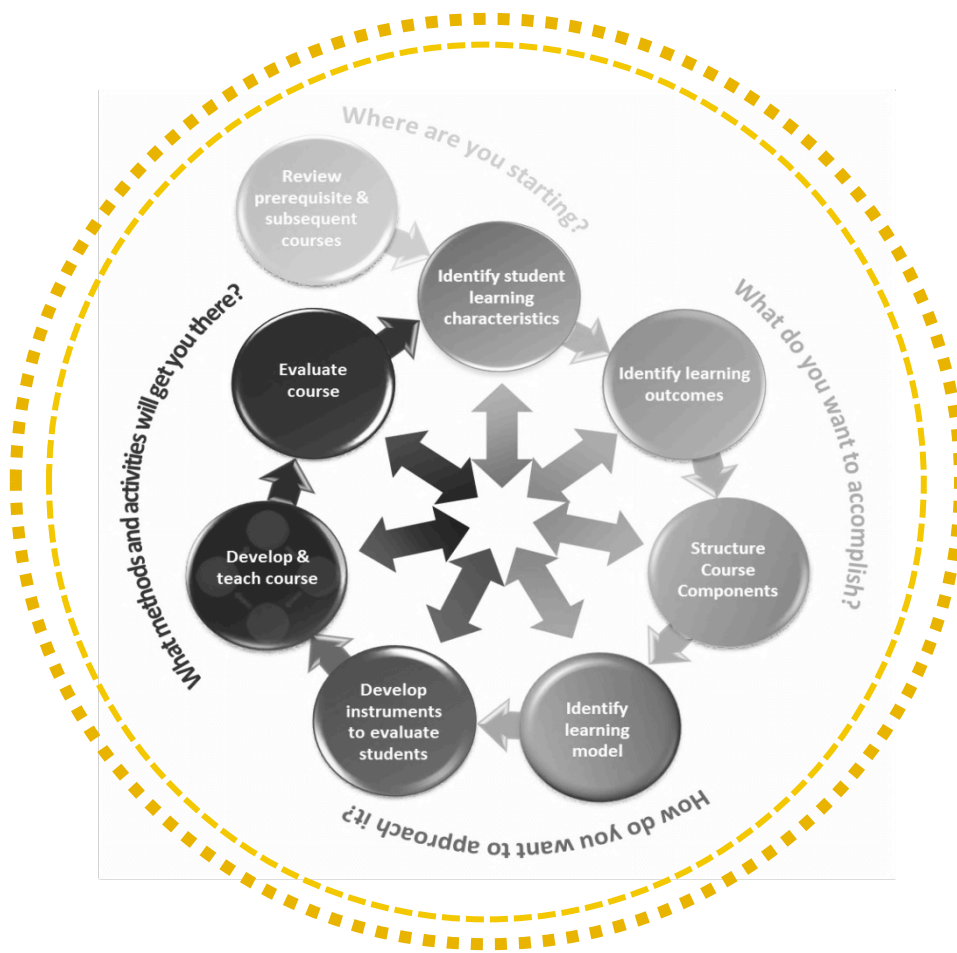


**iMPACT**

## FACULTY LEARNING COMMUNITIES (FLC), REDESIGN MODELS, TECHNOLOGIES, AND PHYSICAL SPACE USAGE

The curriculum used as part of the IMPACT program and delivered through the Faculty Learning Communities (FLCs) can be divided into four components (**Figure 4**), organized by leading questions for faculty fellows to consider in the redesign of their course.

- 1) Where are you starting from? Who are your students?
- 2) What do you want to accomplish? What do you want your students to be able to do, know, and appreciate at the end of the course?
- 3) How do you want to approach the redesign and the attainment of your course goals and student learning outcomes?
- 4) What methods and activities will you use to accomplish the redesign and assess the effectiveness of the redesign?



**Figure 4:** Visual schematic of the IMPACT course redesign process

During the FLCs, IMPACT faculty fellows spend a significant amount of time carefully considering the pre-requisites and post-requisites for their course, reflecting on the delivery, content, and structure of their course, and learning about new pedagogies, research and motivational principles that encourage and foster active learning. Specifically, faculty fellows explore:

- **Their students' characteristics and prior knowledge**
- **The development of student learning outcomes and objectives**
- **The alignment of course learning outcomes with appropriate and authentic assessments**
- **Motivation principles and theories**
- **Transformation models and elements of course redesign which foster student-centered teaching and learning**
- **Research-based links between improved student learning, pedagogical approaches, and theories**
- **Active learning techniques like, Team-Based, Case-Based, and Problem-Based Learning**
- **Innovative tools and technologies that foster student-centered learning environments through student engagement and active learning**
- **Informed Learning based in an understanding and proficiency with information pathways**

### Course Redesign Elements and Models

IMPACT faculty, working in collaboration with their redesign teams, transform their courses by taking into consideration redesign elements which have been found to foster student-centered learning environments. Each redesign is designed to meet the faculty-determined student learning outcomes and goals.

The redesign elements are theory-driven and focus on satisfaction of basic psychological needs of **autonomy, competence, and relatedness**. Redesigns, which contribute to the satisfaction of students' needs for

**"The redesign elements are theory-driven and focus on satisfaction of basic psychological needs of autonomy, competence, and relatedness."**

**autonomy**, focus on provision of choices and options to students, provision of a rationale for tasks that are not interesting and not inherently perceived as valuable, and a willingness to consider students' perspective. The need for **competence** is satisfied when opportunities to learn and demonstrate one's skills are provided on a regular basis and in a way that allows students to receive feedback, improve their performance, and try again. In this context, scaffolding of learning experiences is very important. Course redesigns foster the need for **relatedness** when students are provided opportunities to interact and learn from one another, as well as opportunities to interact with the instructor in a meaningful way. This does not mean that students need to develop a close

relationship with everyone in the class, including the instructor, but it does mean that students feel they can trust the instructor to help them achieve their academic goals.

“ In implementing these redesign elements in their classes, IMPACT faculty tend to loosely follow one of the following three redesign models:



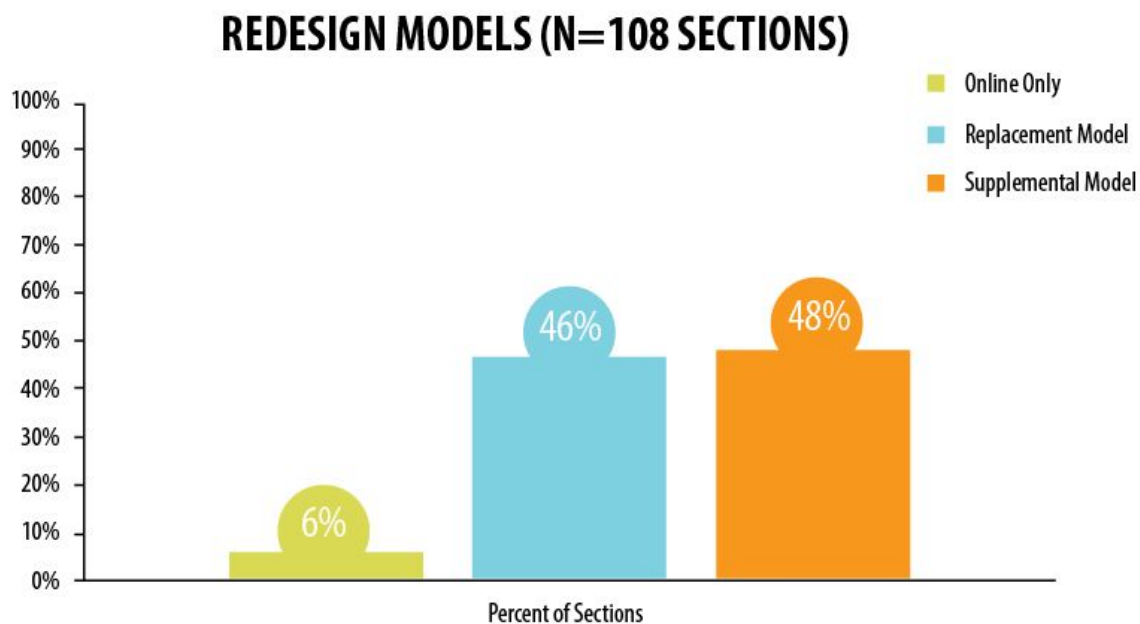
**Supplemental Model** - The supplemental model typically retains the basic structure of the traditional course but supplements lectures and textbook readings with technology-based, online, out-of-class activities. Some active learning strategies can also be integrated during the face-to-face lectures.



**The Replacement Model (Including Hybrid and Flipped)** - Instructor-created video lectures or other videos and interactive lessons are reviewed by students before class. Class time is mostly used for working through problems and collaborative learning. Some face-to-face class time can be eliminated and replaced by out-of-class, online, and interactive learning activities.



**Fully Online Model** - The fully online model eliminates all in-class meetings and moves all learning experiences online, using Web-based, multi-media resources, commercial software, or automatically evaluated assessments with guided feedback and alternative staffing models.



**Figure 5:** Types of redesign chosen by IMPACT fellows over the past three cohorts.

## USE OF TECHNOLOGY

Information Technology at Purdue (ITaP) has developed a portfolio of technology tools to enhance learning and engagement in and out of the classroom. ITaP recently won the *Campus Technology* magazine annual award for top innovations, in 2012 for its mobile applications. Furthermore, ITaP is recognized internationally as a leader for campus technology innovation and has won 6 *Campus Technology* annual innovation awards since 2006. You can learn more about the Studio suite of technologies at the following link <http://www.itap.purdue.edu/studio/hq/>

As shown below in **Table 1**, there are a variety of technologies and instructional tools one can use in order to create an engaging and collaborative learning environment. IMPACT faculty fellows integrate many of these technologies into their course redesigns in order to foster student engagement, motivation, and active learning. Visit the ITaP website to learn more about the IMPACT faculty fellows who have made use of these technologies to support student learning and create student-centered learning environments.

**“...IMPACT faculty fellows integrate many of these technologies into their course redesigns in order to foster student engagement, motivation, and active learning.”**



**BoilerCast:** BoilerCast is a lecture capture system that enhances and extends instructional activities whether in face-to-face, blended or fully online courses. It is available in select classrooms and powered by software and hardware from Echo360.



**Mixable:** Creates a course stream. Connects students in a course to share thoughts, images, videos, and other files in a Facebook-like environment accessible from mobile devices as well as computers.



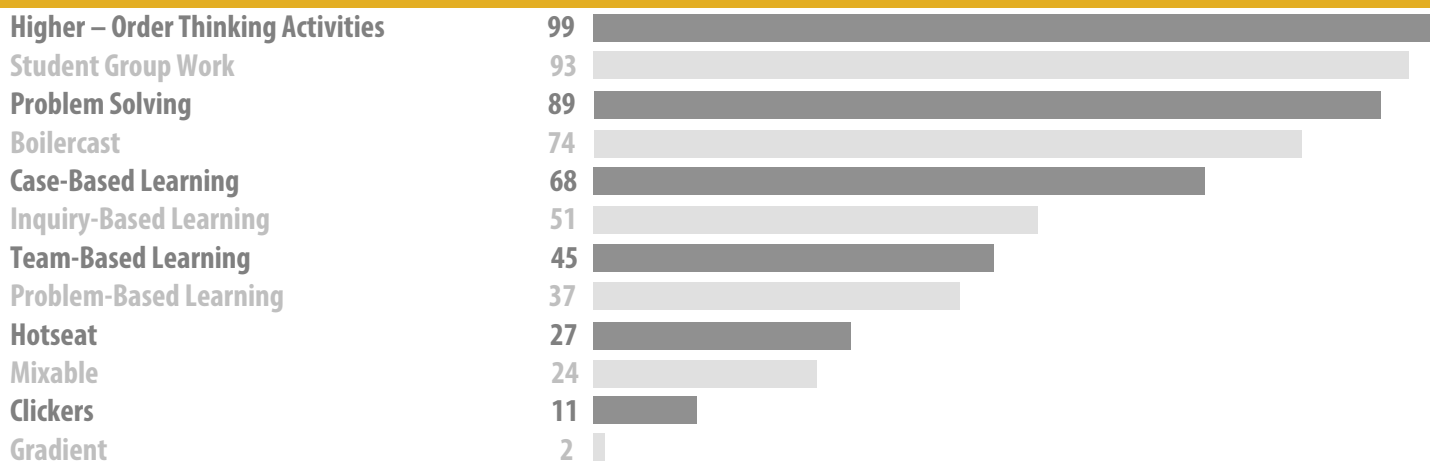
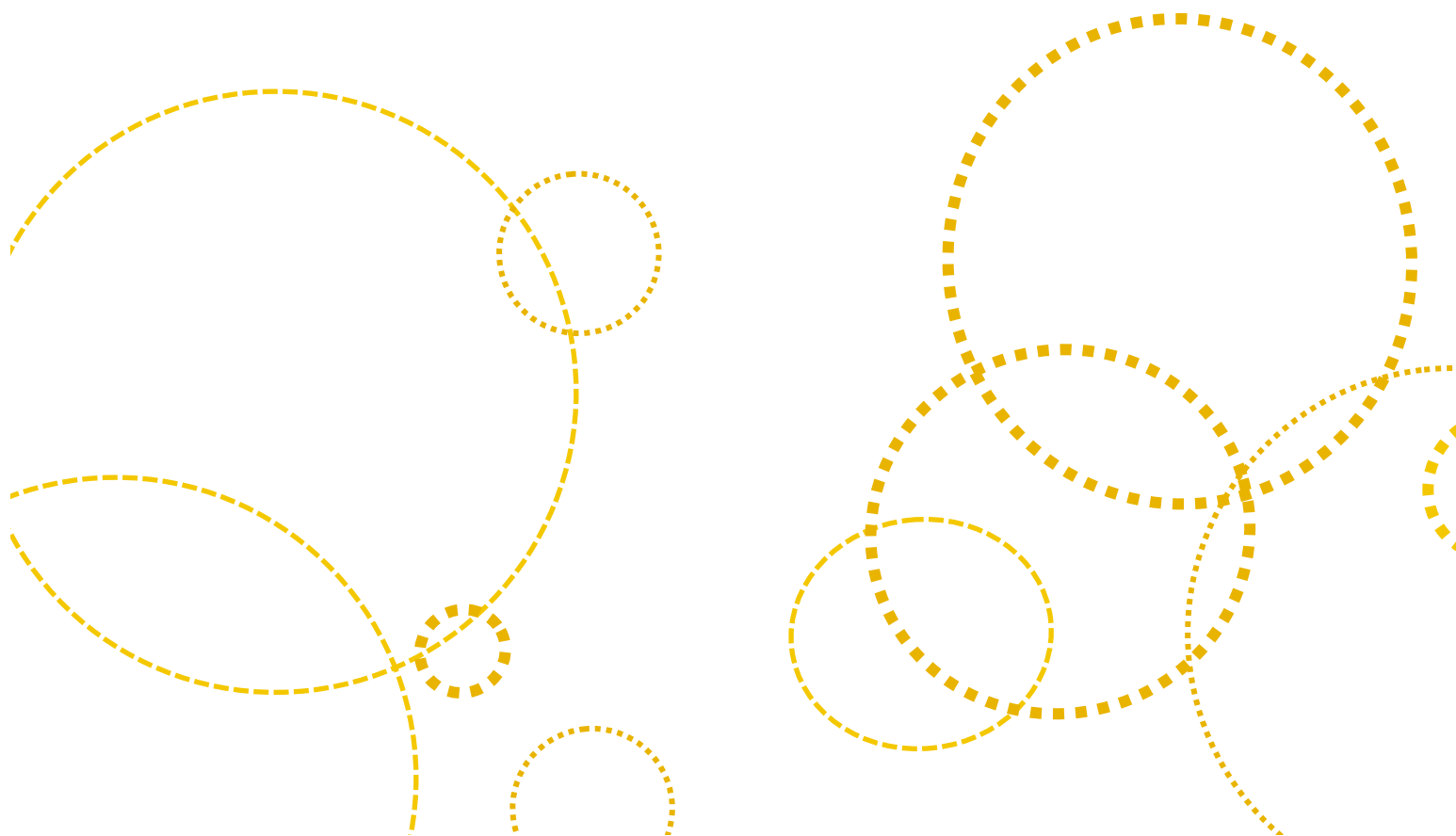
**Hotseat:** Through an online interactive interface, Hotseat allows students to post questions, respond to comments, and answer questions in real time in large classrooms.



**Gradient:** Modeled on the Calibrated Peer-Review project from UCLA, Gradient is a web-based tool that incorporates writing elements of drafting, feedback, and reflection, all calibrated to match an instructor's expectations and grading criteria.

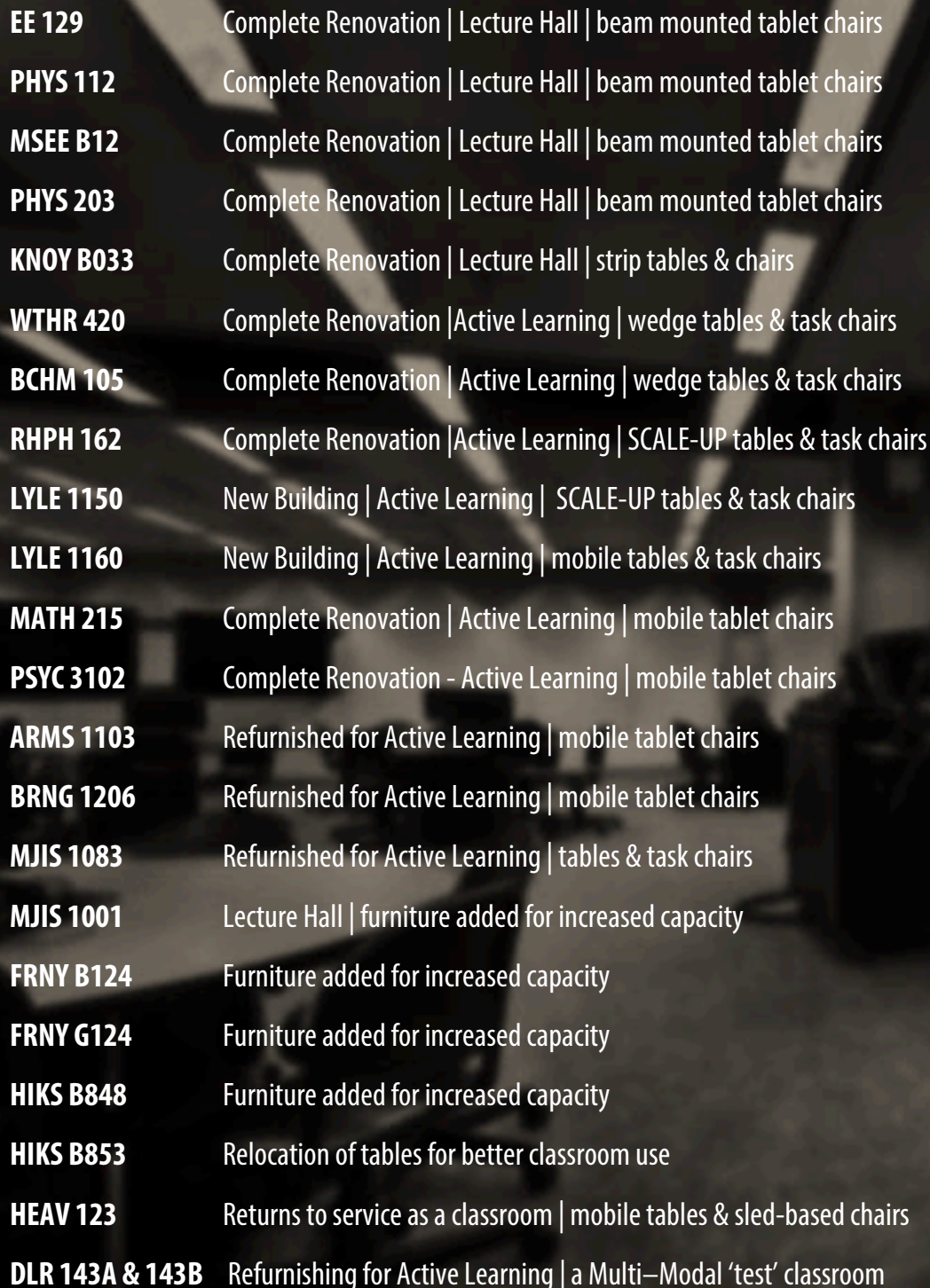
## INSTRUCTIONAL TOOLS/TECHNOLOGIES

## FREQUENCY OF SECTIONS USING TOOLS (N=108)

**Table 1:** Frequency of sections using various technologies or instructional tools

## USE OF CLASSROOM

As the number of course redesigns grow steadily, instructors continue to demand more student-centered learning environments. In response, important collaborations between several campus units have contributed to the success of many newly developed or refurbished classrooms spaces in 2014. According to Space Management & Academic Scheduling (SMAS), the following Classrooms and other Learning Spaces became available this past year:



<b>EE 129</b>	Complete Renovation   Lecture Hall   beam mounted tablet chairs
<b>PHYS 112</b>	Complete Renovation   Lecture Hall   beam mounted tablet chairs
<b>MSEE B12</b>	Complete Renovation   Lecture Hall   beam mounted tablet chairs
<b>PHYS 203</b>	Complete Renovation   Lecture Hall   beam mounted tablet chairs
<b>KNOY B033</b>	Complete Renovation   Lecture Hall   strip tables & chairs
<b>WTHR 420</b>	Complete Renovation   Active Learning   wedge tables & task chairs
<b>BCHM 105</b>	Complete Renovation   Active Learning   wedge tables & task chairs
<b>RHPH 162</b>	Complete Renovation   Active Learning   SCALE-UP tables & task chairs
<b>LYLE 1150</b>	New Building   Active Learning   SCALE-UP tables & task chairs
<b>LYLE 1160</b>	New Building   Active Learning   mobile tables & task chairs
<b>MATH 215</b>	Complete Renovation   Active Learning   mobile tablet chairs
<b>PSYC 3102</b>	Complete Renovation - Active Learning   mobile tablet chairs
<b>ARMS 1103</b>	Refurnished for Active Learning   mobile tablet chairs
<b>BRNG 1206</b>	Refurnished for Active Learning   mobile tablet chairs
<b>MJIS 1083</b>	Refurnished for Active Learning   tables & task chairs
<b>MJIS 1001</b>	Lecture Hall   furniture added for increased capacity
<b>FRNY B124</b>	Furniture added for increased capacity
<b>FRNY G124</b>	Furniture added for increased capacity
<b>HIKS B848</b>	Furniture added for increased capacity
<b>HIKS B853</b>	Relocation of tables for better classroom use
<b>HEAV 123</b>	Returns to service as a classroom   mobile tables & sled-based chairs
<b>DLR 143A &amp; 143B</b>	Refurnishing for Active Learning   a Multi-Modal 'test' classroom



Therefore, as of fall, 2014, Purdue University currently has 29 active learning classrooms with flat flooring; 4 active-learning tiered lecture halls, and a multi-modal classroom (living room concept) being researched in the Discovery Learning Research Center.

Research by the Discovery Learning Research, Office of Institutional Research Assessment and Effectiveness, and Purdue Libraries is underway to examine Purdue's active learning spaces. Student and instructor perception data about IMPACT classroom spaces and technology used is being collected and analyzed. Comparison data will also investigate differences in grades and DFW rates of students in a course using an active learning classroom and those in a traditional classroom.



MGMT 301 | HIKS G980D



BCM 101 | HIKS B848



## FACULTY LEARNING COMMUNITY (FLC) CURRICULUM

### Organization

The Faculty Learning Community (or FLC) that we use in IMPACT lies at the heart of the transformation process. In order to balance the needs of the transformation curriculum, with its specific deliverables, and the faculty autonomy and loose structure of an FLC, we have modified the traditional FLC model. The FLC more closely mirrors a graduate seminar, with specific “assignments” at various parts in the course. We also organize the faculty of each Cohort into smaller groups within the FLC, wherein they can interact with fellow instructors and their dedicated support staff.

**“The support team consists of individuals from four different units on campus: The Center for Instructional Excellence, Teaching and Learning Technologies in ITaP, Purdue Libraries, and Purdue Extended Campus.”**

The FLC groups consist of 2, 3 or 4 faculty, with a corresponding number of support team members, depending on the needs and circumstances of the participating fellows. For instance, a cohort may have three faculty members from different departments who all have large courses and express a desire to foster stronger student engagement. Or, a department may make a concerted effort to have several connected courses in one cohort, and their fellows will comprise one group in order to maximize curricular alignment in their design.

The support team consists of individuals from four different units on campus: the Center for Instructional Excellence, Teaching and Learning Technologies in ITaP, Purdue Libraries, and Purdue Extended Campus. Each support team has one “primary” member who is responsible for arranging out-of-class meetings and coordinating faculty development in the group. The remaining teams consist of “secondary” support members who provide both their general knowledge of redesign and expertise from their respective units. The support team works to meet the needs of the faculty.

### Deliverables and Work

The IMPACT FLC occurs over 14 sessions, each 75 minutes in length during a fall or spring semester. Each week has specific work that the fellow is expected to complete outside of the FLC session. This work is conducted through Purdue’s Blackboard Learn website, mirroring the type of pre-work that faculty in interactive classes may ask of their undergraduate students. Readings, videos, and resources are all available on the course website, and fellows have access to the site throughout and after their participation in the FLC. The pre-work averages between 1-2 hours weekly. In concert with the emphasis on a dedicated and focused course design initiative, the total time commitment is 3-4 hours per week. As reflected in the faculty funding supplement, IMPACT represents a sincere time commitment during the FLC semester.

Fellows complete assignments throughout the semester depending on the particular focus for each session. However, all fellows are asked to complete three “deliverables” that are vital to course design and assessment of the effectiveness of the redesign. These include:

### **1. Research Question**

The IMPACT program is guided by research and scholarly inquiry; therefore, all FLC participants are asked to submit a research question concerning their redesign. The scope of the research question is determined by each fellow, but represents a specific, answerable inquiry regarding modification to the course. The fellow considers evidence that may be used to answer the question and, working with the research team, explores the particular query in the semesters following the redesign. Dedicated support resources are available for research question construction, data analysis, and publication.

### **2. Course Outcomes for Students**

Research is often linked to student learning outcomes. Fellows submit 3-5 course-level skills or understandings that students who successfully complete the course will demonstrate. These outcomes may align with departmental or accreditation requirements and are completely at the discretion of the fellow. The fellows further explore specific learning objectives that support the course-level outcomes.<sup>1</sup> These outcomes are defined along a taxonomic dimension, using Bloom’s three taxonomic domains.<sup>2</sup> The research question and course-level outcomes and specific learning objectives are all submitted early in the FLC and revised later after reflection.

### **3. Assessment Map**

The final submission is an assessment plan that maps course-level outcomes (and possibly specific learning objectives) to student course work. This map may extend to each assignment, project or even question that the student completes, but is necessarily mapped at least to a summative project or exam. This assessment map is used to help answer each fellow’s research question regarding their design.

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<sup>1</sup> “Outcome” and “Objective” are often used interchangeably in literature on student learning, and certain accrediting bodies prioritize one term over the other. IMPACT uses “course-level outcome” and “specific-learning objective” to differentiate the level of specificity.

<sup>2</sup> Anderson and Krathwohl’s 2000 update of Bloom’s Taxonomy is utilized in the FLC to provide greater specificity for fellows, as needed.

## Syllabus

To see a sample of the latest FLC syllabus, click here:

<http://www.purdue.edu/impact/pdf/Fall%202014%20FLC%20syllabus.pdf>

## Guiding Principles

While the IMPACT FLC involves the formal creation of specific documents, the principles that guide the learning community and sessions prioritize faculty control of the process and discussion and active learning in all aspects whenever possible.

Faculty are not required to follow any specific template for their redesign, nor are they to integrate any specific methodologies, technologies, models or frameworks. The support teams work with each individual instructor to adapt the FLC curriculum and activities to the needs of the faculty member. Even as these needs change over the course of a semester, the IMPACT management and support teams work to maximize the fellow's own choices.

The Faculty Learning Community prioritizes connection among peers. To realize these connections, fellows from previous cohorts serve as invited guests for several of the sessions, providing expertise and direct experience from their redesign. They often serve as the most powerful voice for IMPACT fellows, as they can offer an unadulterated view of the process, the benefits and potential challenges, as well as the gains of particular approaches.

Whenever possible, the FLC is held in one of Purdue's many "active learning spaces." These are spaces that allow for seamless transition between group or pair-based discussion to dialogues between all participants and the session facilitator. The facilitator of each session works to ensure active learning, reflection and discussion are prioritized for the participants, modeling several of the techniques that have enabled IMPACT faculty to increase student engagement and higher-order thinking in their undergraduate courses. In particular, the IMPACT FLC utilizes supplemental and hybrid models. IMPACT does not stress or prioritize any particular mode of redesign, but the curriculum features robust online resources and "pre-work" in an attempt to maximize faculty time and discussion and introduce the fellows to methods with which they may not be familiar.

Support for course redesign does not end with the semester of the FLC. Support team members are available for consultation and assistance as needed by the fellows. Since course design is an iterative process, support team members connect with faculty in the semesters following the FLC to gauge the comfort level of the redesign and maintain their familiarity with each course. This allows the fellow to guide the degree of interaction, while still providing a supportive relationship during the design implementation.

**“While the IMPACT FLC involves the formal creation of specific documents, the principles that guide the learning community and sessions prioritize faculty control of the process, and discussion and active learning in all aspects...”**

